NEW TERTIARY SHELLS FROM FLORIDA

BY MAXWELL SMITH

Recent government construction of dikes adjacent to Lake Okeechobee has resulted in a considerable amount of Tertiary material being brought to the surface. Frequent visits to this region early in 1935 by the writer and his friends have resulted in the acquisition of between three and four hundred species of shells. Practically all of these were in a remarkably good state of preservation.

Most of the shells obtained appear to belong to the Pliocene and parallel those which were collected in the Shell Creek area by Heilprin, Willcox and Dall. Species which were considered rare there have turned up at Clewiston in comparative abundance. Others which are supposed to be common at Shell Creek are, in the Okeechobee district, conspicuous by their absence.

Under the circumstances it is deemed advisable not to at present associate this material with any definite period. Further and more complete investigations, together with actual supervised excavation, will eventually settle these problems. Tuomey and Holmes in their monumental work upon the South Carolina "Pliocene" did not realize the frequent overlapping of the beds and Dall has already pointed out the confusion which resulted in consequence.

It is highly gratifying to associate with some of the new species the names of those persons who have assisted largely in their discovery. These students and collectors are permanent residents of Florida or else annual winter visitors to the state.

At Loxahatchee, west of the Palm Beach mainland city, road construction has uncovered additional material. Here were secured apparent representatives of both the Miocene and Pliocene, the area being comparatively near the present coast. Among species new to these regions may be mentioned:

Labiosa (*Raeta*) *canaliculata* Say. Clewiston. Dall suspected that eventually this species would be found in the Pliocene. The specimens collected at Clewiston, almost under the dredge, undoubtedly belong to that formation. They are unusually large in size and retain a chocolate brown color.

Conus verrucosus Hwass. Loxahatchee. Compared with specimens from the West Indies this shell agrees well. It also is found recent upon the Florida Keys. The fossil examples are apparently new to Tertiary records for the United States. Pl. 9, fig. 1.

Littorina irrorata v. *carolinensis* Conrad. Clewiston. Pl. 9, fig. 1. Reported from Volusia County, Florida. The specimen figured is only 18 mm. in length.

Cassis inflata Shaw. Clewiston. The two specimens taken lack the frequent varices but are otherwise normal. No mention is made of this species in Dall's work.

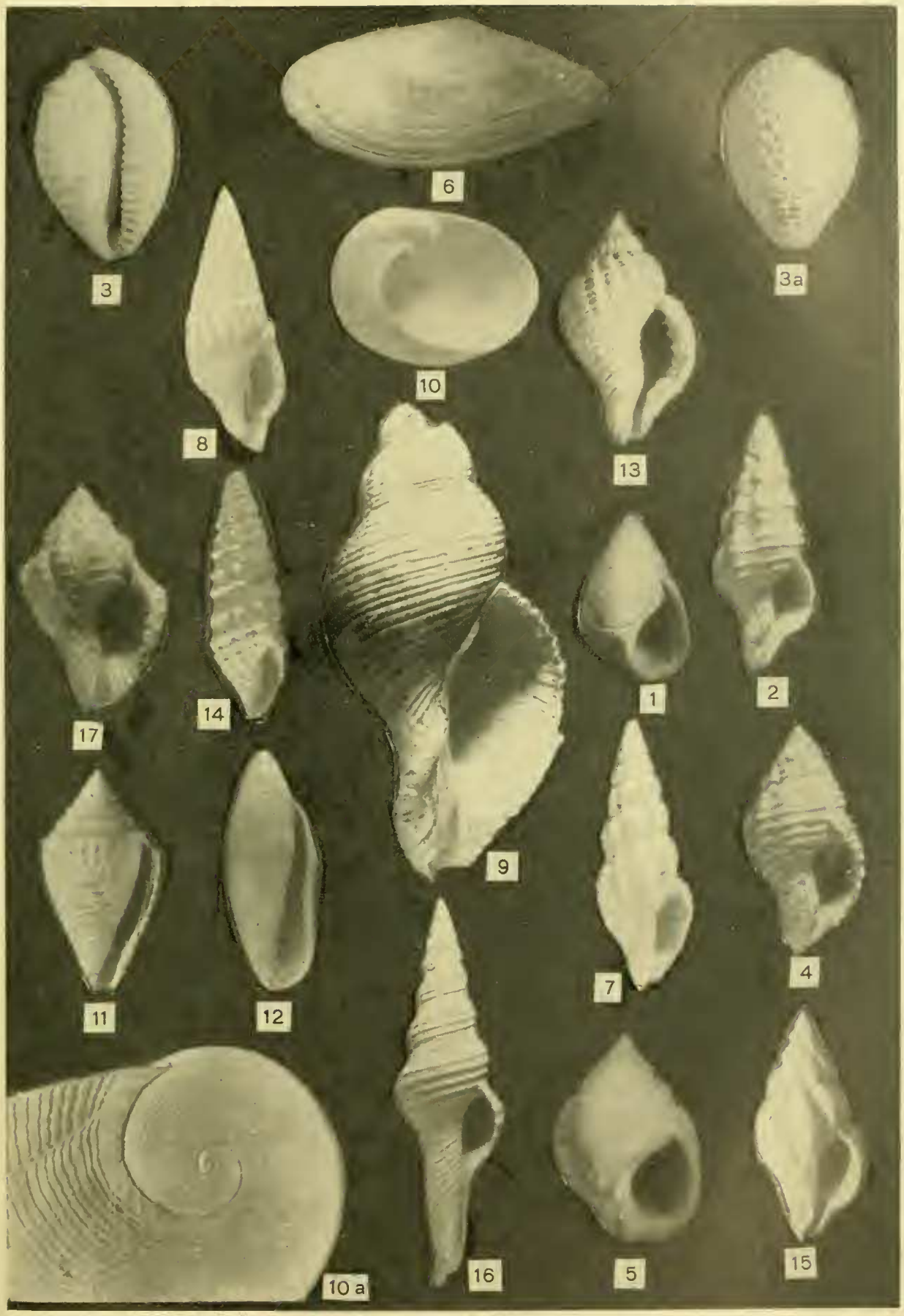
Tonna sp. Fragments of a large species indicate its presence in the marls at Clewiston. Possibly larger pieces will later be taken and permit identification.

Tellina perryae n. sp. Shell elongate, umbones inconspicuous, rostrate; concentric lamellae closely placed, raised slightly, present on final two-thirds of growth, remainder of surface adjacent to umbones much smoother and with finer sculpture; also more shining; lunule long and narrow, moderately deep; posterior dorsal area with two folds, the concentric sculpture bridging these sharply cut, almost entire surface covered with fine radial lines which become very much stronger in the right valve toward the posterior folds. Length 49 mm., height 23.5 mm. Pl. 9, fig. 6.

A very beautiful shell, possibly near *T. strophia* Dall from the Oligocene. In the description of that species there is no mention of radial sculpture which is a characteristic feature of the present one. Unfortunately it is impossible to separate the valves, in order to examine the interior, without destroying the specimen. Holotype in the writer's collection. Clewiston, Florida.

It is named after Dr. Louise Perry, of Sanibel, Florida, whose studies of west Florida mollusks have resulted in many contributions to our knowledge of that fauna.

Sinum polandi n. sp. Shell of medium size, whorls rapidly increasing in size, somewhat compressed; nuclear whorls smooth and apparently partly keeled, adjacent suture well impressed, later becoming less apparent and then broken or puckered by the obliquely variable and irregularly placed growth lines; spiral sculpture consisting after nucleus of regularly placed broad, flattish, indented, ribs, the interspaces narrower, these ribs on



Maxwell Smith: Tertiary Shells from Florida.

the body whorl varying more in width; base destitute of the spiral ribs but with slight indications of lines toward the periphery. Length 25 mm., breadth 20 mm., height 15 mm. Holotype in the writer's collection. Clewiston, Florida. Pl. 9, figs. 10, 10A.

Dall in his Tertiary Mollusca states on p. 379 that *Sinum perspectivum* does not antedate the Post-pliocene. *S. polandi,* apparently its progenitor, actually was dug out with a Pliocene assemblage. Named after William Poland, of West Palm Beach.

Cypraea (*Pustularia*) *gabbiana* (?) *loxahatchiensis* n. subsp. Shell rather solid, dorsal line distinct but not wide, upper surface strongly pustulate, lower extremity slightly compressed at sides; narrow margin of base with about 22 raised ribs, some of the ribs interrupted, possibly due to wear, extending around to a projecting edged thinner margin with fewer ribs farther apart. Length 29 mm. Holotype in the writer's collection. Pl. 9, figs. 3, 3A. Loxahatchee, Florida.

This interesting shell, apparently the first *Pustularia* reported from the United States, is placed for the present under *gabbiana* of Guppy, a West Indian species. Gabb confused that species with *P. nucleus.* In view of the fact that these shells belong to the West Indian Miocene it is remarkable to find the Florida example associated with Pliocene species. Loxahatchie, however, is comparatively close to the present coast where Miocene deposits are frequent.

The resemblance of the new shell to *Pustularia nucleus* is very striking and suggests further study in connection with Panamic isthmian formation.

Urosalpinx. Much confusion prevails with respect to the identity of the Florida species of this group, both recent and fossil. Specimens of *U. perrugatus* uniformly possess a smaller and more contracted aperture than *U. cinereus.* The canal is also longer and more closed.

Tuomey and Holmes's reference to *U. cinereus* is dubious. Their illustration, however, appears not to be *U. trossulus* which has a relatively short spire and less prominent ribs. It is significant that *U. cinereus* has never been reported from the marls